DOCUMENT RESUME

ED 197 008 UD 021 084

AUTHOR Natkin, Gerald L.
TITLE The Effects of Busing on Second Grade Students Achievement Scores.
PUB DATE Apr 80
NOTE 8p.: Paper presented at the SIG Urban Education Session at the Annual Meeting of the American Educational Research Asscciation (Boston, MA, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Achievement Gains: Busing: *Desegregation Effects: Elementary Education: Grade 2: *Mathematics: *Reading Achievement: *School Desegregation
IDENTIFIERS Kentucky (Louisville)

ABSTRACT

This study examined the effects of desegregation on the achievement scores of second grade students in Louisville, Kentucky, who participated in the system's desegregation plan. The Stanford Achievement Tests were administered to students at the end of first grade to determine achievement levels in reading and mathematics. At the end of second grade, students were posttested with the Comprehensive Test of Basic Skills. Linear regression analysis indicated that participation in the desegregation plan had no effect on either the reading or the mathematics scores of the second graders. Tables of data are appended. (MK)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Gerald L. Natkin

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED197008

The Effects of Busing on Second Grade Students Achievement Scores

Gerald L. Natkin
Jefferson County Public Schools
Louisville, Kentucky

In September, 1975, Jefferson County schools underwent desegregation and, simultaneously, merger with the former Louisville Public School System.

Prior to that time it had been planned to do a baseline testing of all students in both systems using the same achievement battery, partly in order to determine the effects of desegregation over time. However, that proved to be impossible within the time limits imposed by the court order. Since the two school systems used different tests and had entirely different sampling procedures, we had to abandon the idea of determining the effect of desegregation by any type of pre - post analysis.

In retrospect the absence of pre-desegregation achievement baseline was probably not harmful, since any type of pre-post analysis would have hopelessly confounded desegregation effects with those of the merger, the drastic demographic shifts which occurred in the community, and most importantly with the intensely emotional climate of the community during the first years the plan was implemented.

However, the initial Jefferson County plan had some features which do allow for some analyses of the effects of desegregation, particularly in the early years of school:

Paper presented at SIG Urban Education Session: An Assessment of the Effect of Busing and School Desegregation on Jefferson County (Louisville): Five Years Later, Annual Meeting of the American Educational Research Association, Boston, 1980.

UD021084

1. During the school years 1975-76 through 1978-79 first grade children were not included in the desegregation plan. Therefore, achievement tests administered to first graders were not affected by desegregation, and can serve as uncontaminated predictors of later achievement. (As of this year, first grade students are included in the plan.)
2. With certain exceptions (schools not included in the plan, and self-contained special education students) all regular program students in the system are involved in desegregation at some grades. The particular years of assignment to the plan is determined only by race and the first letter of the pupil's last name. While we would not consider this random assignment, it does not appear to contain any obvious sources of bias, and may be approximately random within race.

These features make it possible to examine the effect of desegregation on the achievement scores of second grade students during their first year of participation in the plan, and to follow the students over a period of years.

Procedures

Students:

The students included in the study were all Jefferson County students in second grade during the 1978-79 school year, with the following exceptions:

1. Student lacking pre-test scores for the previous year, for whatever reason
2. Students who were repeating the second grade
3. Students in schools exempt from the desegregation plan. These schools fall into two categories:

A. Schools which are "naturally" desegregated because of their geographic situation.

B. Optional schools, which offer special programs. These schools serve self-selected student populations, and are desegrated by their admission procedures.

4. Special education students. Except for certain limited cases, such students receiving part-time speech therapy, these students are usually not given the achievement batteries, and therefore do not appear in the data.

5. Students living in the attendance areas of schools from which they could not be bused; i.e. white students living in the attendance areas of schools predominantly black by residence.

Testing:

Each spring achievement batteries are given to all students in Jefferson County schools, with the exception of certain special education groups. The 1977-78 pre-test was the Stanford Achievement Test, Form B, Primary Level 1. In 1978-79 the Comprehensive Test of Basic Skills, Form S, Level C was adopted, and is used as the post-test for these analyses. We will consider only total reading and total mathematics scores.

Data Analysis:

The data were analyzed by linear regression analysis, done separately for reading and mathematics totals. The analytic method was to first fit a 15-variable regression equation to the post-test scores, which incorporated the following factors:

1. Race (black or white)
2. Sex
3. Present involvement in desegregation plan (bused vs. non-bused)

4. Pre-test score in the same achievement area

5. - 15. All of the 2, 3 and 4 factor products of the first four variables

The models were then restricted to test the following two hypotheses:

1. Within race - sex groups, the effect of busing on achievement scores is constant across pre-test levels (no pre-test X busing interaction effect).
2. With race-sex groups the difference between bused and non-bused students at any pre-test level is zero (no busing effect).

Results

Reading Scores:

The full 15-variable model resulted in an R^2 of .5185. There were no significant busing X pre-test interactions (R^2 = .5179, F = .64, DF = 4, 2474, P > .05), nor were there significant constant differences between the bused and non-bused students regressions lines (R^2 = .5175, F = .46, DF = 4, 2478, P > .05).

Mathematics Scores:

The full model for mathematics scores resulted in R^2 of .4360.

As in reading, these were no significant pre-test X busing intereactions (R^2 = .4356, F = .65, DF = 4, 2474, P > .05), or constant busing effects (R^2 = .4350, F = .87, DF = 4, 2478, P > .05).

Discussion

Very briefly, these analyses indicate that busing had virtually no impact on either reading or mathematics scores.

This study is the first we have done on the effects of busing, and we plan to do several others shortly, including a multi-year longitudinal analysis, and a follow-up of this group. At present we can't generalize beyond our promoted second-grade group, but it is encouraging to find that in spite of the inevitable inconveniences students being bused must undergo, such waking up earlier than

than non-bused students, spending a considerable part of the day on a school bus, and in this case, changing schools in their second year, that busing produced no negative effects on achievement in the short run.

Table 1. Regression Data, Means, and Standard Deviations for READING Scores

	N	REGRESSION		1978*		1979**	
		SLOPE	INTERCEPT	MEAN SCORE	SD	MEAN SCORE	SD
TOTAL GROUP	2490	.3764	18.5073	112.6847	22.9805	60.9249	12.5248
Not Bused	1894	.3445	22.9581	114.6785	22.5406	62.4667	11.3937
Bused	596	.4331	9.9642	106.3490	23.2346	56.0252	14.5463
BLACKS	484	.4310	8.5124	103.6818	23.5458	53.1963	14.8166
Not Bused	70	.4046	10.3708	101.7857	26.6137	51.5571	15.5336
Bused	414	.4363	8.0998	104.0024	23.0071	53.4734	14.6934
WHITES	2006	.3383	23.9367	114.8569	22.3102	62.7896	11.1335
Not Bused	1824	.3345	24.3569	115.1732	22.2295	62.8854	10.9965
Bused	182	.3745	20.0033	111.6868	22.9257	61.8297	12.4167
MALES	1218	.3963	16.3294	110.7759	23.3543	59.6166	13.5732
Not Bused	937	.3509	21.8689	112.6553	22.7497	61.3970	12.2148
Bused	281	.4593	5.6602	104.5089	24.2755	53.6797	16.0004
FEMALES	1272	.3574	21.2482	114.5126	22.4745	62.1777	11.2953
Not Bused	957	.3350	24.4354	116.6594	22.1674	63.5141	10.4284
Bused	315	.3951	15.4478	107.9905	22.1750	58.1175	12.7807
BLACK MALES	225	.4475	4.8602	102.5111	24.8664	50.7333	15.9220
Not Bused	32	.4193	7.8898	105.0625	28.2225	51.9375	16.3588
Bused	193	.4536	4.2283	102.0881	24.3214	50.5337	15.8830
BLACK FEMALES	259	.4057	12.8599	104.6988	22.3340	55.3359	13.4536
Not Bused	38	.3971	11.9166	99.0263	25.2271	51.2368	15.0179
Bused	221	.4033	13.4247	105.6742	21.7122	56.0407	13.0740
WHITE MALES	993	.3498	22.2268	112.6485	22.5943	61.6294	12.1169
Not Bused	905	.3435	22.9473	112.9238	22.5043	61.7315	11.9175
Bused	88	.4100	15.5508	109.8182	23.4445	60.5795	14.0391
WHITE FEMALES	1013	.3225	26.1927	117.0217	21.8233	63.9269	9.9524
Not Bused	919	.3214	26.2968	117.3885	21.7412	64.0218	9.8826
Bused	94	.3344	25.0699	113.4362	22.4128	62.0000	10.6215

* End of Grade 1, Stanford Achievement Test, Primary Level I Battery, Form B, 1974.
** End of Grade 2, Comprehensive Test of Basic Skills, Level C, Form S, 1974.

Table 2. Regression Data, Means and Standard Deviations for MATHEMATICS Scores

	N	REGRESSION		1978*		1979**	
		SLOPE	INTERCEPT	MEAN SCORE	SD	MEAN SCORE	SD
TOTAL GROUP	2490	.6429	10.1116	45.9711	8.9387	39.6651	9.1221
Not Bused	1895	.6355	11.0540	46.9916	8.5016	40.9150	8.5984
Bused	595	.5723	11.2351	42.7210	9.5100	35.6840	9.5958
BLACKS	482	.5033	12.5385	41.5166	9.7916	33.4357	9.3988
Not Bused	70	.5445	10.2927	40.4714	10.6550	32.3286	9.5260
Bused	412	.4936	13.0432	41.6942	9.6399	33.6238	9.3757
WHITES	2008	.6249	11.7631	47.0403	8.3787	41.1604	8.3946
Not Bused	1825	.6244	11.7469	47.2416	8.3103	41.2444	8.3905
Bused	183	.6417	11.4250	45.0328	8.8068	40.3224	8.4124
MALES	1211	.6561	9.2959	46.2494	9.1178	39.6416	9.3858
Not Bused	932	.6294	11.0887	47.4657	8.5743	40.9646	8.7836
Bused	279	.6273	8.7590	42.1864	9.7010	35.2222	9.9792
FEMALES	1279	.6306	10.8630	45.7076	8.7612	39.6873	8.8688
Not Bused	963	.6447	10.8655	46.5326	8.4096	40.8671	9.4197
Bused	316	.5182	13.7092	43.1930	9.3281	36.0918	9.2408
BLACK MALES	223	.5089	12.2157	40.6861	9.9136	32.9193	9.5178
Not Bused	32	.4954	13.1330	42.3125	11.0145	34.0938	9.5457
Bused	191	.5105	12.0909	40.4136	9.7220	32.7225	9.5240
BLACK FEMALES	259	.4969	12.8944	42.2317	9.6473	33.8803	9.2906
Not Bused	38	.5708	8.6264	38.9211	10.2308	30.8421	9.3766
Bused	221	.4719	14.2043	42.8009	9.4511	34.4027	9.1961
WHITE MALES	988	.6354	10.9745	47.5051	8.4404	41.1589	8.6664
Not Bused	900	.6276	11.3037	47.6489	8.4246	41.2089	8.6611
Bused	88	.7237	7.3321	46.0341	8.5103	40.6477	8.7534
WHITE FEMALES	1020	.6182	12.3589	46.5902	8.2977	41.1618	8.1268
Not Bused	925	.6245	12.0257	46.8454	8.1828	41.2789	8.1230
Bused	95	.5811	14.3897	44.1053	9.0183	40.0211	8.1188

* End of Grade 1, Stanford Achievement Test, Primary Level I Battery, Form B, 1974.
** End of Grade 2, Comprehensive Test of Basic Skills, Level C, Form S, 1974.